

L 10037-67 EWT(m)/EWP(j) RM
 ACC NR: AP6014698 (A) SOURCE CODE: UR/0342/65/000/012/0057/0059
 AUTHOR: Shikher, M. G. (Associate); Yezhova, Z. P. (Associate); Rybkina, L. A. 16
 (Associate)
 ORG: Ivanov Scientific Research Institute of the Cotton Industry IvNITI (Ivanovskiy nauchno-issledovatel'skiy institut khlopchatobumazhnoy promyshlennosti IvNITI)
 TITLE: Bleaching with per acids
 SOURCE: Tekstil'naya promyshlennost', no. 12, 1965, 57-59
 TOPIC TAGS: textile, peroxy organic acid, bleaching powder
 ABSTRACT: Some of the problems of bleaching with per acids by the continuous saturation-steaming method were examined using desized and scoured cambric. The fabric can be bleached with peracetic acid at not too high temperatures (60-70°C) to moderate whiteness which is retained, but little soil removal is effected. More whiteness is obtained with peracetic acid at low pH, but its stability is less than in hydrogen peroxide bleached fabric. Scoured fabric is bleached more easily than unscoured. Capillary properties are readily attained by bleaching at low temperatures. Peracetic acid bleaching at 100°C causes substantial destruction of the fabric cellulose, hence it cannot be used at high temperatures, and at low temperatures it does not meet the oxidizing and surface active requirements for bleaching desized cotton fabric. Orig. art. has: 4 tables. 15
 SUB CODE: 11, 13/ SUEM DATE: none/ ORIG REF: 001 UDC: 677.064-12:677.826
 Card

SHIKHER, O. S.

"Discoloration of Lead Crystal, in Glass Production," Leg. Prom.,² No. 4, 1944. Engr.

FATEYEV, Ivan Nikolayevich; RABINOVICH, E.A., red.; SHIKHER, S.M., red.;
VORONIN, K.P., tekhn.red.

[Electric power; popular study] Elektroenergetika; populiarnyi
ocherk. Moskva, Gos.energ.izd-vo, 1960. 215 p. (MIRA 13:12)

(Electric power)

SHIKHEYEVA, L.V.

Composition of compounds formed during the extraction of
cobalt(II) by naphthenic acids. Zhur. neorg. khim. 10 no.6:
1486-1489 Je '65. (MIRA 18:6)

NESHUMOV, B.V., kand.iskusstvoved.nauk; KOSHELEV, A.Ye., arkhitekt; ASTROVA, T.Ye., arkhitekt; ~~SHIKHEYEV, V.M.~~, arkhitekt; VOSHCHANOVA, G.K., arkhitekt; GORBUNOVA, V.A., arkhitekt; KOVAL'KOV, V.G., arkhitekt; MARKEYEV, Yu.S., arkhitekt; YAVOROVSKAYA, M.E., arkhitekt; OGRYZKO, P.V., arkhitekt; TIKHONOVA, N.V., arkhitekt; MANANNIKOVA, L.V., arkhitekt; GRADOV, G.A., red.; PAVLENKO, M.V., red.

[Furniture and equipment for public buildings; catalog based on materials from the Exhibition of Furniture and Equipment for Public Buildings, 1959-1960] Mebel' i oborudovanie dlia obshchestvennykh zdani; katalog sostavlenn po materialam vystavki mebeli i oborudovaniia dlia obshchestvennykh zdani, 1959-1960 gg. Moskva, Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.materialam, 1960. 186 plates. (MIRA 14:2)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut obshchestvennykh zdaniy i sooruzheniy. 2. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Gradov). (Furniture--Catalogs) (Public buildings--Equipment and supplies)

SOV/78-3-11-12/23

AUTHORS: Grinberg, A. A., Shikheyeva, L. V.

TITLE: The Oxidation of Complex Titanium Oxalates in the Potentiometric Titration (Okislitel'noye potentsiometricheskoye titrovaniye kompleksnykh oksalatov titana)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 11, pp 2491 - 2495 (USSR)

ABSTRACT: The oxidation of the compounds $K_2[TiO(C_2O_4)_2] \cdot 2H_2O$, $K[Ti(C_2O_4)_2] \cdot 2H_2O$ and $[Pt(NH_3)_4][TiO(C_2O_4)_2] \cdot 2H_2O$ was investigated. The method of the synthesis of the above mentioned compounds was given. The potentiometric titration of these compounds with $KMnO_4$ was carried out at 35-70°C and a potentiometric titration curve was plotted. The curve of $K_2[TiO(C_2O_4)_2] \cdot 2H_2O$ was investigated in dependence on the acidity of the solution; it showed a jump which corresponds to the oxidation of the oxalate group. The potentiometric titration curve of the compound $K[Ti(C_2O_4)_2] \cdot 2H_2O$ has two jumps. The oxidation of the

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The Oxidation of Complex Titanium Oxalates in the
Potentiometric Titration

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compound $K_2[TiO(C_2O_4)_2] \cdot 2H_2O$ proceeds according to the following scheme:
 $5K_2[TiO(C_2O_4)_2] + 4KMnO_4 + 16H_2SO_4 = 4MnSO_4 + 5TiOSO_4 + 20CO_2 + 7K_2SO_4 + 16H_2O$. The first stage of the oxidation of $K[Ti(C_2O_4)_2] \cdot 2H_2O$ is the following:
 $5K[Ti(C_2O_4)_2] + KMnO_4 + 4H_2SO_4 + H_2O \rightarrow MnSO_4 + 5H_2[TiO(C_2O_4)_2] + 3K_2SO_4$. The gross-reaction of the oxidation of $[Pt(NH_3)_4][TiO(C_2O_4)_2] \cdot 2H_2O$ at $55^\circ C$ proceeds according to the following scheme:
 $5[Pt(NH_3)_4][TiO(C_2O_4)_2] + 6KMnO_4 + 19H_2SO_4 = 6MnSO_4 + 5[Pt(NH_3)_4(OH)_2]SO_4 + 20CO_2 + 5TiOSO_4 + 3K_2SO_4 + 14H_2O$. The results show that no separation of the titrated oxalate groups takes place in the complex oxalate compounds of the trivalent and tetravalent titanium. A gradual oxidation of the oxalate groups was found only in the complex

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The Oxidation of Complex Titanium Oxalates in the
Potentiometric Titration

SOV/78-3-11-12/23

compounds with platinum. There are 3 figures and 10
references, 8 of which are Soviet.

SUBMITTED: July 18, 1957

Card 3/3

69052

5.2620
AUTHORS:

Grinberg, A. A., Shikheyeva, L. V.

S/078/60/005/03/016/048
B004/B002

TITLE:

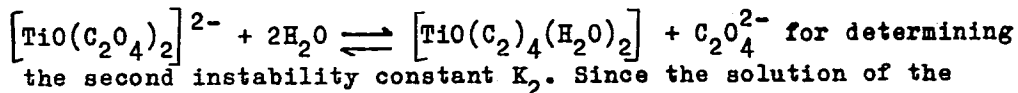
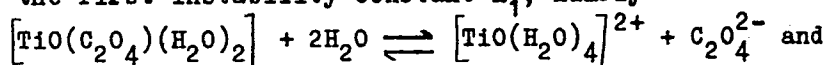
The Stability of Complex¹ Titanyloxalate¹ in Solutions

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 3, pp 599-603 (USSR)

ABSTRACT:

The authors refer to a paper by B. V. Ptitsyn and L. I. Vinogradova (Ref 1) who determined the instability constant of $[\text{Fe}(\text{C}_2\text{O}_4)_3]^{3-}$ by means of an oxalate-silver electrode, and state the reasons for having chosen an oxalate-mercury electrode. The instability constant of $[\text{TiO}(\text{C}_2\text{O}_4)_2]^{2-}$ was determined by means of a potentiometric titration with HCl and by determining the oxalate ion by means of an oxalate-mercury electrode. The authors specify the six equilibria existing in the solution of potassium titanyl oxalate. In their investigation they chose the following equilibria for determining the first instability constant K_1 , namely



the second instability constant K_2 . Since the solution of the

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complex titanyl oxalate reaction is acid, only a slight correction

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B004/B002

of the instability constant is necessary. Experimental data are given in table 1. Table 2 gives the concentrations calculated for the complexes and the $C_2O_4^{2-}$ ions, and also the values of K_2 . The mean value found was $K_2 = 0.77 \cdot 10^{-5}$. The values obtained by potentiometric titration with HCl, were examined by means of an oxalate-mercury electrode. Calibration of the electrode by means of potassium oxalate is described. Experimental results are shown in table 3. Table 4 gives the concentrations and values computed as to K_2 . $K_2 = 4.1 \cdot 10^{-5}$. The determination of K_1 was made indirectly on the basis of the general instability constant K_{gen} which by means of potentiometric titration with lye according to Bose (Ref 5), was found to be $1.5 \cdot 10^{-15}$. Hence, K_1 was computed to be $2 \cdot 10^{-10}$. A. K. Babko and L. I. Dubovenko (Ref 6) spectrophotometrically determined K_1 to be $1.5 \cdot 10^{-7}$. These values are to be better defined by further investigations. There are 4 tables and 9 references, 6 of which are Soviet.

SUBMITTED:
Card 2/2

November 25, 1958

S/080/62/035/004/015/022
D244/D301

109-01
AUTHORS: Yakubchik, A. I., Shostatskaya, I. D., Shikheyeva, L. V. and Vlasova, V. M.

TITLE: Structure of butadiene - 1,3 polymers obtained in the presence of Ziegler type catalyst

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 4, 1962, 876-880

TEXT: The authors investigated butadiene - 1,3 polymers obtained in the presence of: $\text{Al}(\text{C}_2\text{H}_5)_2\text{Cl} + \text{TiCl}_4$ in the ratio of 3:1, and (2) $\text{Al}(\text{iso-C}_4\text{H}_9)_3 + \text{TiCl}_4$ in the ratio of 2:1. Attention was paid to the amount and distribution of the 1,2 and 1,4 bonds in the chains and the secondary reactions of branching and combination. The polymer samples were subjected to ozonolysis in methyl acetate solution and the acids obtained were separated by chromatography. The polymers obtained in the presence of the catalyst mixture had relatively evenly distributed 1,2 and 1,4 links in the macromolecules, as there were no acids with more than 3 carboxylic groups

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Structure of butadiene ...

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per molecule. The amount of 1,2 links varied within the limits 1.6-6.1%. There was no clear dependence of the amount of portions 1,4 - 1,2 - 1,4 on the conditions of polymerization. Also no branching was found for the α -methyl group in link 1,4, since the acids obtained did not contain 1,2,3 propanetricarboxylic acid. There are 1 figure, 5 tables and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: C. S. Marvel, J. Org. Ch., 16, 838, (1951).

SUBMITTED: February 6, 1961

Card 2/2

SHIKHIN, Yu. S.

"On the Problems of Modeling Tectonic Phenomena," physicists L. M. Kachanov, Ye. I. Edel'shteyn, G. V. Vinogradov, G. N. Kuznetsov, M. P. Volarovich, and A. V. Stepanov and geologists F. I. Vol'fson, V. A. Aprodov, N. I. Borodayevskiy, and Yu. S. Shikhin

paper presented at the First All-Union Conference on Tectonophysics, Moscow
29 Jan - 5 Feb 1957.

Sum 15623 1563

SHIKHIN, Yu.S.

Determining the location of the hidden structural control of ores
in the Koytash ore deposit. Geol.rud.mestorozh. no.5:80-103
S-O '61. (MIRA 14:9)

1. Karamazarskaya poiskovo-s'yemochnaya tematicheskaya ekspeditsiya.
(Nura-Tau--Ore deposits--Maps)

8(2)

AUTHOR:

Shikhin, Anatoliy Yakovlevich, SOV/161-56-2-26/30
Assistant, Chair for General Electrical Engineering,
Moscow Power Engineering Institute

TITLE:

Increase of the Performance of Pekhral' Resistances in
Ventilation by Air Current (Uvelicheniye moshchnosti
elementov fekhralevykh soprotivleniy pri obduve potokom
vozdukh)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Elektromekhanika i
avtomatika, 1958, Nr 2, pp 209-216 (USSR)

ABSTRACT:

For Diesel locomotives and gas turbine locomotives
electrodynamic braking is applied. As the brake resistances
occupy much room, it is important to increase the performance
of these individual resistance elements. In the present paper
this question is investigated and the brake resistances
thermal state analyzed in order to select the most favorable
cooling and construction system. Testing of the Pekhral'
elements with ventilation cooling was performed at the
kafedra elektricheskogo transporta MEI (Chair for Electrical
Transportation of the Moscow Energy Institute). A method of
calculating the brake resistances is shown, which permits

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Increase of the Performance of Fekhrat' Resistances
in Ventilation by Air Current

SOV/161-56-2-26/30

temporary calculation of performance and heating up of resistances as dependent on blowing intensity, environmental temperature and design of resistances, with sufficient accuracy. Examples are given which show that a certain number of rows of resistances can be placed in the air-flow direction if the resistances have their admissible air discharge temperature and admissible overheating of resistances. In order to reduce the size of the entire plant, it is expedient to use a two-way fan with driving electromotor. There are 6 figures and 5 references, 4 of which are Soviet.

ASSOCIATION: Kafedra obshchey elektrotekhniki Moskovskogo energeticheskogo instituta (Chair for General Electrical Engineering of Moscow Power Engineering Institute)

SUBMITTED: January 14, 1958

Card 2/2

8(5), 8(2), 12(3)

SOV/105-59-5-8/29

AUTHORS: Nekrasov, O. A., Candidate of Technical Sciences, Shikhin, A. Ya.,
Engineer

TITLE: Self-regulation of Diesel Locomotive Generators Using Magnetic
Amplifiers (O samoregulirovani teplovoznnykh generatorov s
ispol'zovaniyem magnitnykh usiliteley)

PERIODICAL: Elektrichestvo, 1959, Nr 5, pp 31-36 (USSR)

ABSTRACT: In connection with the production of new heavy Diesel loco-
tives in the USSR, great attention is being paid to the problem
of self-regulation of generators with the use of magnetic
amplifiers. On Diesel locomotives the generator excitation is
produced by direct-current exciters. It is shown here that the
use of a synchronous exciter instead of the direct-current ex-
citer greatly reduces the spreading of self-regulation, and of-
fers a possibility of reducing the amplifying coefficient and
the capacity of the system for the automatic regulation of the
capacity of the Diesel engine and of the generator. But the
stability of the automatic regulation is also affected by other
factors. The problem of stability with the use of a synchronous

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SOV/105-59-5-8/29

Self-regulation of Diesel Locomotive Generators Using Magnetic Amplifiers

exciter is investigated here, and the analytical correlations between the properties of self-regulation and the properties of the individual building groups of the wiring are determined in a general form. This general correlation is ascertained by means of an example for a special case of combination of certain building groups. A method of obtaining this correlation is but not given here. The correlation obtained is then generalized. On the basis of this general method, some variants of wirings and combinations of building groups of the regulating systems for the generators of Diesel locomotives were investigated theoretically and in practice. The investigation of the system at a reduced number of revolutions of the Diesel, and the calculation of the necessary properties of the regulation building groups were also carried out on the basis of the general correlations given here. The experimental control in the laboratory is described. The general correlations given for systems of self-regulation of generators for Diesel locomotives with the use of magnetic amplifiers make it possible to investigate wirings, and to carry out technical calculations of stationary operating conditions. The correlations obtained can also be

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SOV/105-59-5-8/29

Self-regulation of Diesel Locomotive Generators Using Magnetic Amplifiers

used for other drives in a generator-d.c.motor system. There are 6 figures and 3 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power Engineering Institute)

SUBMITTED: January 31, 1959

Card 3/3

STEPANOV, A.D., doktor tekhn.nauk; SHIKHIN, A.Ya., inzh.

Regulating the generators of diesel locomotives by means of
magnetic amplifiers. Vest. elektroprom. 31 no. 5: ~~44-47~~ My '60.
(MIRA 13:8)

(Diesel locomotives)

(Magnetic amplifiers)

(Electric generators)

SHIKHIN, Anatoliy Yakovlevich, assistant

Automatic control of the power and the electric current of the generator of a diesel locomotive. Izv. vys. ucheb. zav.; elektromekh. 4 no.9:56-69 '61. (MIRA 14:9)

1. Mskovskiy energeticheskiy institut.
(Diesel locomotives) (Electric generators)

SHIKHIN, A. YA.

S/271/63/000/001/017/047
D413/D308

AUTHORS: Nekrasov, O.A. and Shikhin, A.Ya.

TITLE: On the calculation of operating range for automatic control systems for diesel locomotive electric transmissions

PERIODICAL: Referativnyy zhurnal, Avtomatika, telemekhanika i vychislitel'naya tekhnika, no. 1, 1963, 45, abstract 1A248 (Tr. Mosk. energ. in-ta, no. 37, 1961, 75-85)

TEXT: A description is given of a graphic-analytical method for calculating the required variation of magnetizing force F_M to drive the DC split-pole exciter used on Soviet diesel locomotives to achieve generator self-regulation for constant diesel power. A certain range of variation of magnetizing force is necessary to compensate for a considerable spread in self-regulation characteristics, and is secured by the systems of automatic control of power and current. The calculation is based on the technical data of the machines, exciter circuit diagrams of the diesel locomotive and families of

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On the calculation ...

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exciter load curves. These curves are obtained with the generator exciter windings both hot and cold, for a number of independent exciter winding current I_i with one fixed value of shunt exciter winding current I_s . Using the exciter load curves, a plot of exciter voltage against magnetizing force $U_E (R_i)$ is constructed (for a given value of I_i and generator exciter winding impedance). The actual self-regulation characteristic is derived graphically by finding the intersection points of the curve of exciter voltage against magnetizing force (constructed from the exciter load curves) and the curve of magnetizing force against exciter volts obtained by considering the exciter circuit diagram. An example of the calculation is given. Self-regulation characteristics obtained in practice are stated to have agreed with the calculated one to an accuracy of about 3%. 4 figures. 1 reference.

[Abstracter's note: Complete translation]

Card 2/2

SHIKHIN, Anatoliy Yakovlevich, assistant; ANDERS, Vitaliy Ivanovich,
assistant

Design of magnetic amplifiers with internal feedback. Izv. vys. ucheb.
zav.; elektromekh. 6 no.3:316-323 '63. (MIRA 16:5)

1. Moskovskiy energetichaskiy institut.
(Magnetic amplifiers)

I. 16699-66

ACC NR: AR5018675

SOURCE CODE: UR/0196/65/000/007/A008/A008

AUTHOR: Sharokhin, G.I.; Shikhin, A.Ya.

ORG: none

TITLE: Application of multidigit indexing of passive and active parameters for the calculation of electric circuits of direct current with linear and nonlinear parameters

SOURCE: Ref. zh. Elektrotehnika i energetika, Abs. 7A66

REF SOURCE: Tr. Mosk. energ. in-ta, vyp. 57, 1964, 27-35

TOPIC TAGS: electric current, linear automatic control, direct current, volt ampere characteristic, circuit design

TRANSLATION: A two-digit indexing of the values with which one has to deal in examining electric circuit processes, indicates not only the location where the pertinent element is switched in, but also the direction of the bypass or of the operation and voltage of the current. Such an indexing is applicable to the calculation of circuits with active and passive elements whose volt-ampere characteristics are approximated by two direct currents; this indexing allows the application to them of methods used in calculating linear circuits. Also, it greatly decreases the amount of work needed for such calculations. This method is not directly applicable to the calculation of circuits whose characteristics of passive elements are approximated by more than two direct currents. 3 figures and 5 references. B. Yakhinson

SUB CODE: 09/

SUBM DATE: none

UDC: 621.3.011.1

Card 1/1 77/25

L 8229-66

ACC NR: AR5018110

SOURCE CODE: UR/0271/65/000/007/A037/A037

SOURCE: Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika. Svodnyy tom,
Abs. 7A271

AUTHOR: Shikhin, A. Ya.

TITLE: Calculating parameters of resonant frequency sensors

CITED SOURCE: Tr. Mosk. energ. in-ta, vyp. 57, 1964, 41-47

TOPIC TAGS: frequency sensor, resonant frequency sensor

TRANSLATION: A low-Q resonant circuit used in automatic-control circuits is analyzed.
Formulas for calculating R L C parameters of the resonant circuit are deduced.
Experiments have demonstrated adequate accuracy of the calculations. Bib 2, figs 2.

SUB CODE: 09, 13

Card 1/1

UDC: 621.398.694.4:533

L 20887-66 EWT(1)/ESS-2/ETC(f)/EWG(m) AT

ACC NR: AP6002524

SOURCE CODE: UR/0286/65/000/023/0031/0032

AUTHORS: Shikhin, A. Ya.; Danil'chenko, V. P.; Sil'vanskiy, I. V. 40

ORG: none B

TITLE: Direct current source²⁹ for feeding a permeameter. Class 21, No. 176629

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 23, 1965, 31-32

TOPIC TAGS: permeameter, permanent magnet, testing device, test equipment, test method, automation

ABSTRACT: This Author Certificate presents a direct current source for feeding a permeameter used for testing permanent materials. The unit is designed to automate the testing process, and contains a direct current generator. The excitation winding of this DC generator is fed from an amplidyne with a fixed negative feedback of the generator voltage (see Fig. 1). The unit also contains a master circular potentiometer with a drive from a nonreversible electric motor with a regulated speed for the purpose of changing the shape and frequency of the test voltage. The unit has a circular rheostat with a sliding contact drive from the nonreversible motor. A push-pull magnetic amplifier provides synchronization

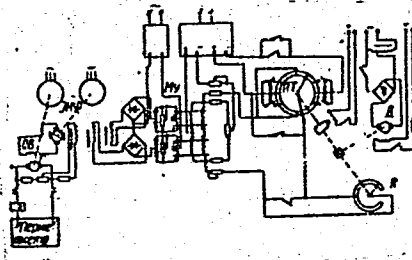
Card 1/2

UDC: 621.318.34:621.318.443 2

L 20887-66

ACC NR: AP6002524

Fig. 1. Г - direct current generator;
OB - generator excitation winding;
3MY - amplidyne; ТТТ - master
circular potentiometer;
И - nonreversible electric motor;
R - circular rheostat;
MY - magnetic amplifier.



of the input of the amplidyne with the output of the master circular potentiometer. A step scanner is used to insure the specified test program. Orig. art. has: 1 figure.

SUB CODE: 14, 09/ SUBM DATE: 08Apr64

Card 2/2 ULR

ACC NR: AP7009075

SOURCE CODE: UR/0413/67/000/003/0051/0051

INVENTOR: Shikhin, A. Ya.; Sil'vanskiy, I. V.

ORG: None

TITLE: An automatic magnetizing unit with a noncontact device for shaping the magnetizing current. Class 21, No. 190931 [announced by the Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 3, 1967, 51

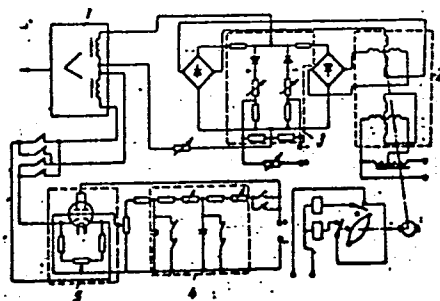
TOPIC TAGS: magnetization, test instrumentation, ferromagnetic material, electric equipment

ABSTRACT: This Author's Certificate introduces an automatic magnetizing unit with a noncontact device for shaping the magnetizing current. The installation contains a master drive, circular potentiometer, magnetic amplifier, amplidyne and magnetizing unit. The device is designed to operate according to the optimum law for variation in the magnetizing current in order to test specimens with any ferromagnetic properties and to provide flexibility in adjustment of the magnetizing current curve. The magnetic amplifier is based on a push-pull adding circuit. Two voltages are fed to the magamp inputs, one from a variable transformer through a polar diode limiter with adjustable pedestal voltage, and the second from a capacitive pulse converter through a cathode follower.

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UDC: 621.318.34:621.317.443.078

ACC NR: AP7009075



1—amplifier; 2—transformer; 3—limiter; 4—pulse converter; 5—cathode follower

SUB CODE: ^{09/}13/ SUBM DATE: 01Jul65

Card 2/2

VLOKH, T.V.; SHIKHINA, L. Ye.

Hemagglutination reaction in the diagnosis of dysentery.

Zhur. mikrobiol., epid. i immun. 43 no. 1325-28 Ja '66

(MIRA 19:1)

1. L'vovskiy institut epidemiologii, mikrobiologii i gigiyeny
i 4-ya Detskaya infektsionnaya bol'nitsa. Submitted January 4,
1964.

SHIKHINASHVILI, N. YA.

SHIKHINASHVILI, N. YA.

Use of penicillin in infectious diseases of the eye. Vest. oft.
29:6, Nov.-Dec. 50. p. 15-8

1. Of the Department of Eye Diseases (Head — Prof. A. N. Shatilov,
deceased), Tbilisi Medical Institute.

CML 20, 3, March 1951

SHIKHINASHVILI, N.Ya.

[Tumors of the orbit] Opukholi glaznitsy. Tbilisi, Gruzmedgiz,
1956. 27 p. (MIRA 13:4)
(ORBIT (EYE)--TUMORS)

SHIKHEREV, N.I.; PUKHOV, A.P.; SHEVYAKOV, N.N.; KOSHELEV, F.F.; NOVIKOV, M.I.

Continuous action proportioning unit for free flowing materials.
Kauch. i rez. 24 no.5:46-48 My '65. (MIRA 18:9)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

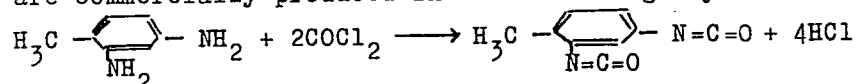
S/064/61/000/001/004/011
B1 10/B215

AUTHORS: Khmel'nitskaya, I. L., Gutorko, A. V., Shikhireva, L. I.,
Stroyesku, A. K.

TITLE: Technological problems of synthesizing 2,4- and 2,6-toluylene diisocyanate

PERIODICAL: Khimicheskaya promyshlennost', no. 1, 1961, 18-21

TEXT: Diisocyanates required for the production of polyurethane, such as 2,4-toluylene diisocyanate and a mixture of 2,4- and 2,6-diisocyanates, are commercially produced in the following way:



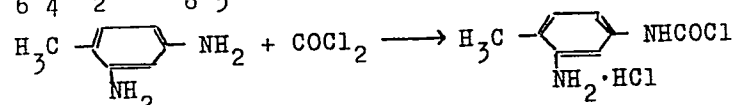
By applying the continuous method, the yield is increased from 65% to 80% as compared to the periodic method. Time-consuming cleaning of the apparatus becomes necessary due to the formation of adhesive resins in the reaction. The authors studied the influence of various factors on diisocyanate and the formation of resin, and the possibilities of using

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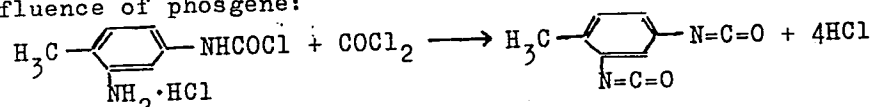
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B110/B215

Technological problems of...

up and removing resin residues for improving the above method. To eliminate side reactions, phosgene treatment is first carried out at low temperatures (0 to 5°C). To eliminate the formation of urea derivatives, toluylene diamine is added to a solution of excessive phosgene in $o\text{-C}_6\text{H}_4\text{Cl}_2$ or $\text{C}_6\text{H}_5\text{Cl}$. The following reaction takes place:



By a temperature increase to more than 100°C, diisocyanate forms under the influence of phosgene:



The authors studied the addition of toluylene diamine dissolved (I) or suspended (II) to an inert solvent during the continuous method. In (I) the diamine was dissolved in $\text{C}_6\text{H}_5\text{Cl}$, heated to 90 to 95°C, and added to the solution of phosgene in $\text{C}_6\text{H}_5\text{Cl}$ which had been cooled down to -10°C.

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B110/B215

In (II), diamine dissolved in C_6H_5Cl was cooled down to $0^{\circ}C$ under constant stirring. The limpid liquid changed into a coarse suspension which was pulverized in the ball mill for 7-8 hr. Degree of dispersion and homogeneity of the suspension were studied under the microscope. At $0^{\circ}C$, the suspension was added to the $-10^{\circ}C$ solution of phosgene; this caused a rise in temperature of up to $-5^{\circ}C$. In (I) and (II), phosgene treatment was continued at $120^{\circ}C$. The process was finished after the residue had disappeared. HCl and $COCl_2$ were blown off by N_2 , and solvent and diisocyanate were separated by fractionation. The isocyanate groups of the final product were determined by condensation of diethylamine. The nitrogen content of the resin was microanalytically determined according to Dumas. In solution (I) larger solid particles formed in the first part of phosgene treatment, due to partial overheating. For suspension (II), the dependence of resin formation on the size of particles is given in a table. With particle sizes $< 10\mu$, the suspension contains no larger solid particles, and the formation of resin is reduced to 15%, as compared to 22 to 32% in solution (I). Aqueous grinding therefore yielded a sufficient degree of dispersion and particle homogeneity at high suspension density. The

Card 3/6

S/064/61/000/001/004/011
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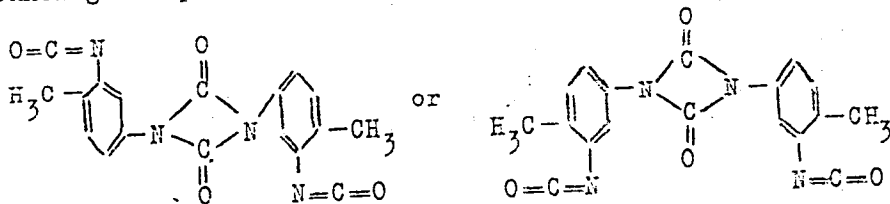
Technological problems of...

decomposition of the resin particles into toluylene diamine can only be carried out with aqueous alkali and under pressure, whereas they can be transformed into diisocyanate by distillation at 215°C and 1 to 80 mm Hg in high-boiling naphthene oil. For the latter process, however, an oil that is stable up to 300°C, a high vacuum, and filtering are required. The authors worked without solvents. After the distillation of diisocyanate at 105 to 107°C and 3 to 7 mm Hg, 16.5% of N₂ were microanalytically determined in the resin residue (38 to 40 percent by weight of the distilled diisocyanate) according to Dumas. Diisocyanate vapors were separated from the residue in the vacuum apparatus at 3 to 7 mm Hg and slowly increasing temperature. At 170 to 180°C it puffed up and hardened. Vapor separation stopped between 280 and 300°C. The residue, a dry, brittle, porous substance, was easily removable after cooling it in the N₂-current. Its nitrogen content was 16.4%. The authors assume that the original residue, besides the not distilled monomers, also contained the following dimer:

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Technological problems of...



which decomposes into the monomer at 175°C. The second residue consists of high-polymer compounds. There are 1 table and 6 references: 2 non-Soviet-bloc.

Card 5/6

Technological problems of...

Legend to the Table: yield of diisocyanate and resin particles by adding emulsions, 1) particle size μ , 2) yield, %, 3) toluylene diisocyanate, 4) resin particles, 5) mixture of 2,4- and 2,6-toluylene diamine, 6) toluylene diamine.

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B110/B215

1) Размер частиц μ	2) Выход, %*	
	3) толуилениди- изоцианата	4) смолистых примесей**
5) Смесь 2,4- и 2,6-толуиленидиаминов		
≤ 10	79,8	15,1
≤ 50	70,0	21,8
≤ 300	65,6	24,4
6) 2,4-Толуиленидиамин		
≤ 10	78,3	15,2
≤ 300	67,0	19,1

Card 6/6

PERSHIN, G.N.; BELIKOV, G.P.; YAKOVLEVA, A.I.; SHIKHIREVA, M.V.

Viral hepatitis in mice as a model for chemotherapeutic re-
search. Vop. virus 8 no.5:574-579 S-0'63 (MIRA 17:1)

Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevtiches-
kiy institut imeni Sergo Ordzhonikidze, Moskva.

YAKOVLEVA, A.I. (Moskva); PERSHIN, G.N. (Moskva); BELIKOV, G.P. (Moskva);
SHIKHIREVA, M.V. (Moskva)

Morphological characteristics of viral hepatitis in mice.
Arkh. pat. 25 no.5:67-71 '63. (MIRA 17:2)

1. Iz otdela khimioterapii (zav. - chlen-korrespondent AMN
SSSR prof. G.N. Pershin) Vsesoyuznogo nauchno-issledovatel'-
skogo khimiko-farmatsevticheskogo instituta imeni S.
Ordzhonikidze.

YAKOVLEVA, A.I. (Moskva); SHIKHIREVA, M.V. (Moskva); PERSHIN, G.N. (Moskva);
MOSKALENKO, N.Yu. (Moskva)

Morphological characteristics of a model of cutaneous leishmaniasis in white mice. Arkh. pat. 27 no.4:52-57 '65. (MIRA 18:5)

1. Otdel khimioterapii (zav. - chlen-korrespondent AMN SSSR prof. G.N.Pershin) Vsesoyuznogo nauchno-issledovatel'skogo khimiko-farmatsevticheskogo instituta imeni Ordzhonikidze.

UNCLASSIFIED --

Directorate of Scientific and Technical Institutions of the Ministry of Defense
Directorate of Scientific and Technical Institutions of the Ministry of Defense, Moscow, USSR.
(Moscow, Oct 54)

Survey of Scientific and Technical Institutions Defended at USSR
Higher Educational Institutions (SO)

SO: Sur. No. 481, 5 May 55

SHIKHIYEV, Fuad Maksimovich

SHIKHIYEV, Fuad Maksimovich, kandidat tekhnicheskikh nauk; ORDELLI, Mikhail Arkad'yevich, inzhener; TSEYTLIN, Grigoriy Yul'yevich, inzhener; PLAKIDA, M.E., redaktor; SAFONOV, P.V., redaktor izdatel'stva; TIKHONOVA, Ye.A., tekhnicheskii redaktor

[Experience in building hydraulic structures] Opyt stroitel'stva gidrotekhnicheskikh sooruzhenii. Moskva, Izd-vo "Morskoi transport," 1957. 118 p. (MIRA 10:9)

(Hydraulic engineering)

SHIKHIYEV, F.M., kand.tekhn.nauk, dotsent

Experimental investigations of screen piles. Nauch.trudy OIIMF
no.13:33-54 '57. (MIRA 11:11)
(Piling (Civil engineering))

SHIKHIYEV, F.M., kand.tekhn.nauk, dotsent; REUT, V.I., kand.tekhn.nauk,
dotsent.

Experimental investigations of new types of loading and un-
loading equipment. Nauch.trudy OIIMF no.13:55-79 '57.
(MIRA 11:11)

(Loading and unloading)

BRYUM, Abram Isayevich, inzh.; VORONOV, Petr Andreyevich, dotsent, kand.
tekhn.nauk [deceased]; GINSBARG, Ruvim Izrailevich, kand.tekhn.nauk;
KUTEYNIKOV, Aleksandr Nikolayevich, inzh.; FEDOROV, Aleksandr
Timofeyevich, prof. [deceased]; SHAPOVALOV, Petr Borisovich, inzh.;
~~SHIKHIYEV, Fuad Maksimovich~~, dotsent, kand.tekhn.nauk; YAVLENSKIY,
S.D., retsenzent; KRUGLENKO, N.K., retsenzent; MATLIN, G.M., kand.
tekhn.nauk, red.; KSENOFONTOVA, Ye.F., red.izd-va; TIKHONOVA, Ye.A.,
tekhn.red.

[Sea ports and harbor facilities] Morskie porty i portovye sooru-
zheniia. Moskva, Izd-vo "Morskoi transport," 1959. 519 p.
(MIRA 12:12)

(Harbors)

SHIKHIYEV, F.M., kand. tekhn. nauk; TSEYTLIN, G.Yu., inzh.

Using precast elements in constructing wharves. Nov. tekhn. mont. i
spets. rab. v stroi. 21 no.2:22-24 F '59. (MIRA 12:1)
(Precast concrete construction) (Wharves)

SHIKHIYEV, Fuad Maksimovich; YEROFEEV, Nikolay Ivanovich; GINSBARG,
Ruvim Izrailevich; TSEYTLIN, Grigoriy Yul'yevich; OBERMEYSTER,
A.M., red.; MARCHUKOVA, M.G., red. izd-va; TIKHONOVA, Ye.A.,
tekhn. red.

[Organization and equipment of sea ports] Ustroistvo i oboru-
dovanie morskikh portov. Moskva, izd-vo "Morskoi transport,"
1960. 413 p. (MIRA 14:5)

(Harbor)

SHIKHIYEV, F.M.

Operating loads acting on mooring structures. Gidrotekhnika no.1:
13-19 '61. (MIRA 15:3)
(Wharves)(Hydraulic engineering--Research)

MAZUR, V.Yu.; SHIKHIYEV, F.M.

Experimental model studies on mooring loads. Gidrotekhnika no.1:
19-25 '61. (MIRA 15:3)
(Anchorage)(Hydraulic engineering--Research)

SHIKHIYEV, F.M.

Lightweight design for elements of bracing port structures employing
reinforcement of the fill. Gidrotekhnika no.2:72-79 '62.
(MIRA 16:5)

(Earth pressure)

(Retaining walls)

SHIKHIYEV, F.M.

Studies of soil deformations and stress. *Gidrotekhnika* no.2:100-110
'62. (MIRA 16:5)
(Soil mechanics)

SHIKHIYEV, F.M.

Generalized soil stress. Gidrotekhnika no.2:110-118 '62.

(MIRA 16:5)

(Soil mechanics)

SHIKHIYEV, F.M.

Coefficient of permeability. Gidrotekhnika no.2:151-153 '62.
(MIRA 16:5)
(Soil percolation)

SHIKHIYEV, F.M.; ISAY, V.M.

Seismic ground pressure. Trudy Otd. energ. Dag. fil. AN SSSR. 1
no.1:3-12 '62. (MIRA 17:7)

SHIKHIYEV, F.M.; MAZUR, V.Yu.

Stresses originating during the approach of vessels to the
mooring bollards of locks. Trudy Otd. energ. Dag. fil. AN
SSSR. 1 no.1:13-24 '62. (MIRA 17:7)

ACC NR: AR6035388

(N)

SOURCE CODE: UR/0398/66/000/009/B002/B002

AUTHOR: Shikhiyev, F. M.; Kovtun, V. V.

TITLE: Investigation of soils with the aid of a bulk shear instrument

SOURCE: Ref. zh. Vodnyy transport, Abs. 9B5

REF. SOURCE: Nauchn. tr. Upr. uchebn. zavedeniy M-va morsk. flota SSSR, no. 1, 1965, 103-106

TOPIC TAGS: soil mechanics, shear strength, measuring instrument

ABSTRACT: A bulk shear instrument in which, unlike in three-axis instruments, the investigated soil is in a state condition of plane deformation, was developed at the soil Laboratory of OIIMF at the suggestion and under the leadership of F. M. Shikhnev. The use of the bulk-shear instrument makes it possible to obtain very good agreement between the results of laboratory investigations and the natural operating state of the soil. The construction diagram of the instrument is presented, and the procedures and sequence of the experiments and of the data reduction are described. 2 illustrations. [Translation of abstract]

SUB CODE: 08

UDC: 624.131.3

Card 1/1

17

SHIKHIVEV, I. A.

PROCESSES AND PROPERTIES INDEX

Separating crystalline vitamin D from ergosterol irradiation products. I. Isolating vitamin D by the Windaus method. T. F. Danilova and I. A. Shikhiev. *Proc. Sci. Inst. Vitamin Research U. S. S. R.* 3, No. 1, 15-19 (1941).

—The Windaus (citraconic anhydride) method of separating vitamin D gave 2 cryst. products from ergosterol after radiation to 80% conversion in unfiltered light from the ARK-3 Hg-vapor lamp. One formed long prismatic needles, m. 114.5-117°, $[\alpha]_D^{25} + 125^\circ$ in acetone and $+129^\circ$ in EtOH, characterized by an absorption max. at 2660 Å. and an absorption coeff. of 2.55 in 0.002% soln. in standard gasoline. It was identified as calciferol. The vitamin D potency is 0.025 γ per I. U. The other product, m. 122-123°, forms rosetts or clusters of colorless needles, $[\alpha]_D^{25} + 127.7^\circ$ in acetone and $+137.2^\circ$ in EtOH. Its vitamin D potency was not detd. but its properties identify it as vitamin D₂ (Windaus). II. Isolating vitamin D₂ as the 3,5-dinitrobenzoate. T. F. Danilova. *Ibid.* 20-8. —After irradiating ergosterol (I) to 80-90% conversion its irradiation isomers were sepd. by fractional extn. with MeOH and pptn. of residual I with digitonin. The irradiation product was directly esterified with 3,5-C₆H₃(NO₂)₂CO-OH. The yield of crude vitamin D₂ 3,5-dinitrobenzoate was 8-17% of the initial I. This ester forms lemon-yellow crystals, m. 145-147°. Hydrolysis gave vitamin D₂ in long prismatic needles, m. 113-115°, $[\alpha]_D^{25} + 82.6^\circ$ in acetone, $+101.7^\circ$ in EtOH, characterized by an absorption max. at 2630 Å. This product gave a deep-yellow color with SbCl₅ and showed vitamin D potency of 0.025 γ per I. U.

Julian F. Smith

ASM-3LA METALLURGICAL LITERATURE CLASSIFICATION

SHIKHEEV, I. A.

Methylpropylethynyl- and methylpropylvinylcarbinols and hydrocarbons obtained from them. I. A. Shikheev (Leningrad State Univ.). *J. Gen. Chem. (U.S.S.R.)* 16, 657-63 (1945).—*Methylpropylethynylcarbinol* (I), prepd. by the Favorskit method from MePrCO and C_2H_2 in the presence of KOH in 60-5% yield, b. 136-7°, d_4^{20} 0.8671, n_D^{20} 1.42103, n_D^{25} 1.43792. Electrolytic reduction with a Cu plate as cathode, Ni wire as anode, and 1% Na_2CO_3 solu. as catholyte gave 75-80% *methylpropylvinylcarbinol*, b. 131-3°, d_4^{20} 0.8367, n_D^{20} 1.42811, n_D^{25} 1.43683, (II), and a small amt. *methylethylpropylcarbinol*, b. 130-42°, d_4^{20} 0.8294. Dehydration of II according to Favorskit (no detailed reference given) over MgSO_4 at 210-20° gave 2 stereoisomers of *3-methyl-1,3-hexadiene*: (a) b. 91-100°, d_4^{20} 0.7131, n_D^{20} 1.43458, n_D^{25} 1.44757, and (b) b. 100-11°, both give *maleic anhydride* adducts, m. 160-2°, *naphthoquinone* adducts, m. 131-2°; a small amt. of *dimer*, $\text{C}_{12}\text{H}_{20}$, b. 100-104°, d_4^{20} 0.9028, n_D^{20} 1.50012, was also obtained. Dehydration of I over MgSO_4 at 210-20° gave 67% *3-methyl-3-hexen-1-yne* (III), b. 93°, d_4^{20} 0.7671, n_D^{20} 1.43366, n_D^{25} 1.44584, and a small amt. of *dimer*, b. 110-15°; the latter was not investigated further. Hydrogenation of III over Pt black gave *3-methylhexane*, b. 80-92°, d_4^{20} 0.6858. The residue after distn. of I from the initial reaction mixt. also gave a small amt. of the *glycol*, $\text{C}_6\text{H}_{12}\text{O}_2$, which appears to be a mixt. of 2 isomeric forms of $(\text{MePrC}(\text{OH})\text{C}_2)_2$, which has 145-7° and m. 47-8° (and 58-9° (solvent for fractional crystn. not specified)).

C. M. Kosolapoff

CA

Electrolytic hydrogenation of acetals with a triple bond.
I. A. Shikhiyev (Azerbaijani Acad. Sci.). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 839-47 (1950).—To 40 g. $\text{Me}_2\text{C}(\text{OH})\text{C}:\text{CH}$ and 30 g. Me_2NPh was added 35 g. MeOCH_2Cl in 1.5 hrs. at -10° , and the mixt. stirred 3 hrs. at room temp.; the upper layer yielded 22.97% $\text{Me}_2\text{C}(\text{C}:\text{CH})\text{OCH}_2\text{OMe}$ (I), b. $109-12^\circ$, d_4^{20} 0.8909, n_D^{20} 1.4250, yellowed on standing. EtOCH_2Cl similarly gave 27.87% $\text{Me}_2\text{C}(\text{C}:\text{CH})\text{OCH}_2\text{OEt}$ (II), b. $120-2^\circ$, d_4^{20} 0.8816, n_D^{20} 1.4200; $\text{iso-CH}_3\text{OCH}_2\text{OEt}$ (III), b. $120-2^\circ$, d_4^{20} 0.8816, n_D^{20} 1.4200; PrOCH_2Cl gave 25.57% $\text{Me}_2\text{C}(\text{C}:\text{CH})\text{OCH}_2\text{OCH}_2\text{Me}$ (III), b. $131-6^\circ$, d_4^{20} 0.8882, n_D^{20} 1.4111; the use of Me_2NPh failed to give better yields under any conditions tried. Addn. of 40 g. ClCH_2OBu in 3 hrs. at -8° to 200 ml. Et_2O , 40 g. $\text{Me}_2\text{C}(\text{OH})\text{C}:\text{CH}$, and 18 g. powd. KOH and letting stand overnight gave 16.06% $\text{Me}_2\text{C}(\text{C}:\text{CH})\text{OCH}_2\text{OBu}$ (IV), b. $148-52^\circ$, d_4^{20} 0.8902, n_D^{20} 1.4150; $\text{iso-AmOCH}_2\text{Cl}$ gave 19.4% $\text{Me}_2\text{C}(\text{C}:\text{CH})\text{OCH}_2\text{O}i\text{-Am}$ (V), b. $159-61^\circ$, d_4^{20} 0.8502, n_D^{20} 1.4109. Addn. of 50 g. MeOCH_2Cl to 200 ml. Et_2O , 55 g. $\text{Me}_2\text{C}(\text{OH})\text{C}:\text{CH}$, and 45 g. quinoline in 1.5

hrs., followed by standing overnight, gave 20.8% $\text{Me}_2\text{C}(\text{C}:\text{CH})\text{OCH}_2\text{OMe}$ (VI), b. $132-5^\circ$, d_4^{20} 0.8887, n_D^{20} 1.4248; $\text{Me}_2\text{C}(\text{C}:\text{CH})\text{OCH}_2\text{OEt}$ (VII), b. $147-50^\circ$, d_4^{20} 0.8809, n_D^{20} 1.4266, was obtained similarly in 29.28% yield. Electrolytic reductions were run in a divided cell, with Ni wire anode, silvered Cu cathode, 1% aq. EtOH-NaOH catholyte, and satd. NaOH anolyte. Under these conditions the following vinyl analogs were obtained: from I, 42.10%, b. $100-4^\circ$, d_4^{20} 0.8620, n_D^{20} 1.4160 (the same product obtained by the condensation of $\text{Me}_2\text{C}(\text{OH})\text{CH}:\text{CH}$ with ClCH_2OMe in the presence of Me_2NPh at -8° , b. $108-11^\circ$, d_4^{20} 0.8612, n_D^{20} 1.4158); from II, 52.18%, b. $105-8^\circ$, d_4^{20} 0.8525, n_D^{20} 1.4125; from III, 40.48%, b. $110-23^\circ$, d_4^{20} 0.8381, n_D^{20} 1.4114; from IV, b. $132-5^\circ$, d_4^{20} 0.8312, n_D^{20} 1.4090 (54.37%); from V, b. $148-51^\circ$, d_4^{20} 0.8218, n_D^{20} 1.4095 (48.35%); from VI, b. $121-4^\circ$, d_4^{20} 0.8612, n_D^{20} 1.4120 (32.88%); and from VII, b. $130-40^\circ$, 55%, d_4^{20} 0.8516, n_D^{20} 1.4190. The vinyl analog of VII was also obtained by condensation at -8° of ClCH_2OEt with $\text{Me}_2\text{C}(\text{OH})\text{CH}:\text{CH}$, and powd. KOH in Et_2O ; the product b. $137-40^\circ$, d_4^{20} 0.8496, n_D^{20} 1.4184. The vinyl derivs. were stable on storage. G. M. Kosolupoff

SHIKHIEV, I. A.

Derivatives of unsaturated tertiary alcohols. I. Synthesis of acetylenic acetals based on vinyl ethers and acetylenic alcohols. M. F. Shostakovskii and I. A. Shikhiev (Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1953, 1001-7. —To 42 g. $\text{Me}_2\text{C}(\text{OH})\text{C}\equiv\text{CH}$ and 72 g. $\text{EtOCH}=\text{CH}_2$ (which failed to react alone) was added 0.02 ml. 30% HCl and the mixt. allowed to stand overnight; distn. after drying with K_2CO_3 gave 79.5% $\text{MeCH}(\text{OEt})\text{OCMe}_2\text{C}\equiv\text{CH}$, b_{11-12} 42-3°, d_{20} 0.8701, n_D^{20} 1.4162, readily hydrolyzing in 2% H_2SO_4 to AcH , $\text{EtOCH}=\text{CH}_2$, and a moderate yield of $\text{MeCH}(\text{OCH}_2\text{C}\equiv\text{CH})_2$ (I), b_1 79-82°, d_{20} 0.8976, n_D^{20} 1.4488. Similarly $\text{iso-PrOCH}=\text{CH}_2$ gave 76.5% $\text{MeCH}(\text{OCHMe}_2)\text{OCMe}_2\text{C}\equiv\text{CH}$, b_{11-12} 153-5°, b_{11-12} 47-8°, d_{20} 0.8568, n_D^{20} 1.4150. Heating this acetal (42.6 g.) with 42 g. $\text{Me}_2\text{C}(\text{OH})\text{C}\equiv\text{CH}$ in a sealed tube 62 hrs. at 170-80° gave a little iso-PrOH , 20.7 g. $\text{Me}_2\text{C}(\text{OH})\text{C}\equiv\text{CH}$ and 46.4 g. crude (32% pure) I, b_1 74-6°, d_{20} 0.8967, n_D^{20} 1.4412. $\text{iso-BuOCH}=\text{CH}_2$ similarly gave 78.2% $\text{MeCH}(\text{OCH}_2\text{CHMe}_2)\text{OCMe}_2\text{C}\equiv\text{CH}$, b_{11-12} 173-4°, b_{11-12} 55-6°, d_{20} 0.8587, n_D^{20} 1.4170. $\text{BuOCH}=\text{CH}_2$ similarly gave 81.5% $\text{MeCH}(\text{OBu})\text{OCMe}_2\text{C}\equiv\text{CH}$, b_{11-12} 181-2°, b_{11-12} 62-3°, n_D^{20} 1.4183, d_{20} 0.8592. The Bu and iso-Bu derivs. were most stable thermally in respect to disproportionation. C. M. Kosolapoff

SHIKHIYEV, I. A.

USSR/ Chemistry - Synthesis

Card 1/1 : Pub. 40 - 20/22

Authors : Shostakovskiy, M. S.; Shikhiev, I. A.; and Kochkin, D. A.

Title : Synthesis and conversions of oxygen-containing silicon-organic compounds. Part 1.- Synthesis of silicon-organic acetals

Periodical : Izv. AN SSSR. Otd. khim. nauk 5, 941-944, Sep-Oct 1953

Abstract : A new synthesis of O-containing silicon-organic compounds, based on the reaction of vinyl ethers and silanols, is discussed. It was established for the first time that triethylsilanol condenses with vinylbutyl and vinylisobutyl ethers in conditions analogous to corresponding syntheses with organic alcohols. The synthesis of hitherto unknown nonsymmetrical butyl- and isobutyltriethylsilaneacetals, is described. A new method for the derivation of various silicon-organic acetals, is presented. Three USSR references (1933-1952).

Institution : Academy of Sciences, Institute of Organic Chemistry

Submitted : December 23, 1952

SHIKHIYEV, I. A.

Synthesis and transformations of oxygen-containing silicoorganic compounds. Synthesis of methyl, ethyl, and isopropyl triethylsilano acetals. M. P. Shostakovskii, K. A. Andrianov, I. A. Shikhiev, and D. A. Koclikin. *Doklady Akad. Nauk S.S.S.R.* 93, 081-3 (1953), cf. preceding abstr. —Heating 33 g. Et_3SiOH , 19 g. $\text{MeOCH}_2\text{CH}_3$ and 0.02 ml. 30% HCl in sealed tube 6.5 hrs. at 65° gave 58.0% MeCH(OMe)OSiEt_3 , b_p $74-5^\circ$, n_D^{20} 1.4235, d_4^{20} 0.8726. To 33 g. Et_3SiOH and 36 g. $\text{EtOCH}_2\text{CH}_3$ was added 0.02 ml. 30% HCl and the mixt. was heated 1 hr. to 50° and left overnight; after drying it gave 45.1% MeCH(OEt)OSiEt_3 , b_p $78-9^\circ$, n_D^{20} 1.4232, d_4^{20} 0.8682. Similarly $\text{iso-PrOCH}_2\text{CH}_3$ and Et_3SiOH with 30% HCl catalyst gave after 8.5 hrs. in a sealed tube at 65° 42% $\text{MeCH(OCHMe)OSiEt}_3$, b_p $87-9^\circ$, d_4^{20} 0.8561, n_D^{20} 1.4238. G. M. Kosolapoff

Inst. Organic Chemistry 100 N.D. Zelinskogo,
Acad. Science, USSR

SHIKHIEV, I. A.

62
 Derivatives of unsaturated tertiary alcohols. II. Synthesis of methyl, ethyl, isopropyl, and butyl dimethylethynyl acetals. M. P. Shostakovskii and I. A. Shikhiev (N. D. Zelinskii Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Izv. Akad. Nauk S.S.S.R., Otd. Khim. Nauk* 1954, 931-5; cf. *C.A.* 48, 2307. — To 21.5 g. $\text{Me}_2\text{C}(\text{OH})\text{CH}:\text{CH}_2$ and 16 g. $\text{MeOCH}:\text{CH}_2$ was added at -12° 0.016 ml. 30% HCl and the mixt. heated in sealed tube 9.5 hrs. at 65° to give after neutralization with K_2CO_3 78% $\text{MeOCHMeO}:\text{CMe}_2\text{CH}:\text{CH}_2$, b_{10-11} $28-9^\circ$, b_{10-11} $132-3^\circ$, n_D^{20} 1.4130, d_4^{20} 0.8601. Letting 43 g. $\text{Me}_2\text{C}(\text{OH})\text{CH}:\text{CH}_2$ and 36 g. $\text{EtOCH}:\text{CH}_2$ stand overnight with 0.012 ml. 30% HCl similarly gave 83.82% $\text{EtOCHMeO}:\text{CMe}_2\text{CH}:\text{CH}_2$, b_{10-11} $40-1^\circ$, b_{10-11} $148-7^\circ$, n_D^{20} 1.4119, d_4^{20} 0.8502. Similarly were prepd.: 79% *iso*- $\text{PrOCHMeO}:\text{CMe}_2\text{CH}:\text{CH}_2$, b_{10-11} $45-6^\circ$, b_{10-11} $166-7^\circ$, n_D^{20} 1.4126, d_4^{20} 0.8423, and 80.8% $\text{BuOCHMeO}:\text{CMe}_2\text{CH}:\text{CH}_2$, b_{10-11} $182-3^\circ$, d_4^{20} 0.8396, n_D^{20} 1.4148. III. Synthesis of dimethylethynyl(vinyl) and methylethynyl(vinyl) tertiary acetals. M. P. Shostakovskii, I. A. Shikhiev, and V. I. Belyaev. *Ibid.* 945-8; cf. *C.A.* 49, 8111a. — Addn. of 0.02 ml. 30% HCl to 24.5 g. $\text{Me}_2\text{C}(\text{OH})\text{C}:\text{CH}$ and 25 g. $\text{Me}_2\text{COCH}:\text{CH}_2$, followed by 5 min. at $70-5^\circ$ and 12 hrs. at room temp. gave 60.6% $\text{Me}_2\text{COCHMeO}:\text{CMe}_2\text{C}:\text{CH}$, b_{10-11} $88-9^\circ$, d_4^{20} 0.8694, n_D^{20} 1.4280. Similarly were prepd.: 72.5% $\text{Me}_2\text{COCHMeO}:\text{CMe}_2\text{C}:\text{CH}$, b_{10-11} $68-9^\circ$, d_4^{20} 0.8692, n_D^{20} 1.4264; 81% $\text{Me}_2\text{COCHMeO}:\text{CMe}_2\text{C}:\text{CH}$, b_{10-11} 55° , d_4^{20} 0.8533, n_D^{20} 1.4256; 74% $\text{Me}_2\text{COCHMeO}:\text{CMe}_2\text{C}:\text{CH}$, b_{10-11} $79-81^\circ$, d_4^{20} 0.8540, n_D^{20} 1.4260. The ethynyl derivs. are relatively less stable than their vinyl analogs; the former yellow in storage. G. M. Kosolapoff

SHIKHIYEV, I. A.

USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61593

Author: Shostakovskiy, M. F., Shikhiyev, I. A.

Institution: None *Inst. Org. Chem. in N.D. Zelinsky, AS USSR*

Title: Investigations of the Syntheses and Conversions of Organosilicon Compounds. Communication I. Synthesis of the Vinyl Ether of γ -hydroxypropyltrimethylsilane

Original
Periodical: Izv. AN SSSR, otd. khim. n., 1954, No 4, 745-747

Abstract: Using γ -hydroxypropyl trimethylsilane (I) as an example the possibility has been ascertained of vinylating organosilicon alcohols. I was prepared by passing for 2.5 hours gaseous ethylene oxide (2 mol) into a cooled to -6° Grignard reagent (from 1 g-atom Mg in 800 ml absolute ether and 1 mol α -chloromethyl trimethylsilane), yield 77.3%, BP 62-63 $^{\circ}$ /10 mm n_D^{20} 1.4298, d_4^{20} 0.8408. The vinyl ether of γ -hydroxypropyl trimethylsilane $CH_2 = CH-OCH_2CH_2CH_2Si(CH_3)_3$ (II) obtained on heating in autoclave (8 hours, 180 $^{\circ}$) a reaction

Card 1/2

SHOSTAKOVSKIY, M.F.
SHOSTAKOVSKIY, M.F.; SHIKHIYEV, I.A.; VLASOV, V.M.; BELYAYEV, V.I.

Synthesis of vinylisopropyl, vinyl dibutyl and vinyl diamyl ethers
and their conversions. Dokl. AN Azerb. SSR 10 no. 7: 473-482 '54.
(MLRA 8:10)

1. Predstavleno deystvitel'nym chlenom Akademii nauk Azerbaydzhans-
skoy SSR Yu.G. Mamedaliyevym.
(Vinyl polymers)

SHOSTAKOVSKIY, M.F.; SHIKHIYEV, I.A.; RELYAYEV, V.I.

Investigation in the field of synthesis of derived tertiary unsaturated alcohols. Dokl. AN Azerb. SSR 10 no. 11: 759-765 '54.
(MLRA 8:10)

1. Predstavleno deystvitel'nyy chlenom Akademii nauk Azerbaydzhanskoy SSR Yu. G. Mamedaliyevym.
(Alcohols)

SHIKHIYEV, I. A.

62
 / Oxygen-containing organosilicon compounds. III. Preparation of triethyl- and triethylsilanols and their transformations. M. F. Shostakovskii, I. A. Shikhiyev, D. A. Kochkin, and V. I. Belyaev (N. D. Zelinskii inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Zhur. Obshchei Khim.* 24, 2202-3 (1954); cf. *C.A.* 49, 1541h, 7510f. Into 109 g. Me_3SiCl in dry Et_2O was passed dry NH_3 9 hrs. at $0-7^\circ$; the pptd. NH_4Cl was sepd. and the soln. distd., yielding 64.3% $\text{NH}(\text{SiMe}_3)_3$, b_p 123-5.6°, d_4^{20} 0.7764, n_D^{20} 1.4080. This (70 g.) was mixed with 50 ml. H_2O , 250 ml. Et_2O , and 10 drops methyl orange indicator soln., and treated with cooling to $0-7^\circ$ with 250 ml. N HCl over 2.5 hrs. when the reaction was complete; distn. of the org. layer gave 88.8% Me_3SiOH , b_p 88-8.6°, d_4^{20} 0.8139, n_D^{20} 1.3802. This (22.5 g.), 21 g. $\text{EtOCH}_2\text{CH}_3$, and 0.004 g. HCl were heated in sealed ampul 8 hrs. at 65° , yielding 15.3% $\text{MeCH}(\text{OEt})\text{OSiMe}_3$, b_p 77-88-9°, n_D^{20} 1.3940, d_4^{20} 0.8340, as well as 18.4 g. $\text{O}(\text{SiMe}_3)_2$, b_p 99-100°, and 5.4 g. $\text{MeCH}(\text{OEt})_2$. Refluxing 151 g. Et_3SiCl with 102.1 g. dry Ac_2O 5-6 hrs. with distn. of AcCl , followed by slow addn. of the residue under the surface of 500 ml. H_2O and 20 ml. 18% NH_4OH below 6° , gave a bop layer of Et_3SiOH , 76%, b_p 80°, b_m 153.5-4.6°, n_D^{20} 1.4341, d_4^{20} 0.8640; the same was formed in 91% yield when 100 g. Et_3SiCl in 500 ml. dry Et_2O and a few drops of phenolphthalein indicator were treated at -5 to $+2^\circ$ with N NaOH until a stable pink color formed; distn. of the org. layer gave the final product. Et_3SiOH has a camphor odor, is sparingly sol. in H_2O , can be stored in a well stoppered flask for long periods; on heating with mineral acids it is transformed to $\text{O}(\text{SiEt})_2$; it does not react with alkalis, but does react with Na and K on heating. Heating 33 g. Et_3SiOH and 21.5 g. $\text{PrOCH}_2\text{CH}_3$ with 0.02 ml. HCl in ampul 10 hrs. at 65° gave 67.45% $\text{MeCH}(\text{OPr})\text{OSiEt}_3$, b_p 80-90°, b_m 204-6°, n_D^{20} 1.4250, d_4^{20} 0.8572.
 G. M. Kosolapoff

(3)

Name: SHIKHIYEV, Ibragim Abasovich

Dissertation: Investigation in the field of the
synthesis and transformations of
secondary, tertiary silico-organic
alcohols and silanols

Degree: Doc Chem Sci

Affiliation: [Not indicated]

Defense Date, Place: 28 Jun 55, Council of Inst of Organic
Chemistry, Acad Sci USSR

Certification Date: 9 Mar 57

Source: BMVO 13/57

SHIKHIYEV, I. A.

Derivatives of unsaturated tertiary alcohols. IV. Electrolytic hydrogenation of methylisobutylethynylcarbinol. I. A. Shikhiyev. *Doklady Akad. Nauk Azerbaidzhan. S.S.R.* 11, No. 7, 469-64 (1955) (in Russian); cf. *C.A.* 41, 1205a; 49, 13390d. — Passage of C_4H_6 into Et_2O soln. of iso-BuCOMe (42 g.) in the presence of 58 g. powd. KOH at 7-8 atm. at 0° gave after usual aq. treatment 75-80% iso-BuCMc(CH:CH)OH, b. 145-6°, d_{20} 0.8548, n_D^{20} 1.4350. Electrolytic reduction of this was run with Cu cathode, without a diaphragm, with Ni wire spiral anode in a soln. of 4 g. NaOH in 170 ml. 80% EtOH with 1.6-2.4 amp. (no electrode areas or c.d. given). After passage of calcd. amt. of current, there was isolated iso-BuCMc(CH:CH)OH, b. 146-7°, d_{20} 0.8332, n_D^{20} 1.4342 (phenylurethan, m. 221-2°). The product with BuOCH:CH₂ and a drop of HCl gave BuOCHMe-OCMc(CH₂CHMe₂)CH:CH₂, b. 64-5°, d_{20} 0.8506, n_D^{20} 1.4330. Silvered Cu cathode gave the same product more rapidly. G. M. Kosolapoff

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SHOSTAKOVSKIY, M.F.; SHIKHIYEV, I.A.; KOMAROV, N.V.

Research in the field of synthesis and conversion of silicon
organic compounds containing oxygen. Dokl. AN Azerb. SSR 11 no. 11;
757-763 '55. (MLRA 9:5)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo AN SSSR.
Predstavleno deystvitel'nym chlenom AN Azerbaydzhanskoy SSR Yu.G.
Mamedaliyevym.

(Silicon organic compounds)

SHOSTAKOVSKIY, M.F.; KOCHKIN, D.A.; SHIKHIYEV, I.A.; VLASOV, V.M.

Investigation in the field of oxygenated silicon organic compounds.
Part 7. Synthesis and certain conversions of silanols. Zhur.ob.
Khim. 25 no.3:622-626 Mr '55. (MLRA 8:7)

1. Institut organicheskoy khimii Akademii nauk SSSR.
(Silanol)

SHIKHIYEV, I. A.

006

Synthesis and transformations of unsaturated organo-silicon compounds. I. Synthesis of organosilicon glycols of diacetylene series I. A. Shikhiyev, M. F. Shostakovskii, and N. V. Komarov. Doklady Akad. Nauk Azerbaidzhan. S.S.R. 12, 333-4 (1956) (Azebaidzhan summary). — To Et-MgBr from 48 g. Mg and 220 g. EtBr was added with cooling 84 g. $\text{Me}_2\text{C}(\text{OH})\text{C}(\text{OH})_2$ in 100 ml. Et_2O and after 2 hrs. there was added 65 g. Me_2SiCl_2 and the mixt. was allowed to stand overnight, yielding after treatment with dil. HCl 64.3% $\text{Me}_2\text{Si}(\text{C}(\text{CCMe}_2\text{OH})_2)_n$, m. $80-2^\circ$ (from C_6H_6).

Similarly were obtained 55% $\text{Et}_2\text{Si}(\text{C}(\text{CCMe}_2\text{OH})_2)_n$, m. 78° , and 48% $\text{Pr}_2\text{Si}(\text{C}(\text{CCMe}_2\text{OH})_2)_n$, m. $70-1^\circ$.

G. M. Kosolapoff

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SHOSTAKOVSKIY, M.F.; SHIKHIYEV, I.A.; KOMAROV, N.V.

Investigations in the field of the synthesis and conversion of oxygen-containing silicon organic compounds. Report no.3: Synthesis and conversion of some vinyl esters of γ -hydroxipropyltrimethyl- and methyldiethylsilanes. Izv. AN SSSR. Otd. khim. nauk no.12:1493-1499 D '56. (MLRA 10:4)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii nauk SSSR.

(Silane)

SHIKHIYEV, I. A.

USSR/Organic Chemistry - Synthetic Organic Chemistry

E-2

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4469

Author : Shostakovskiy, M.F., Shikhiyev, I.A., Komarov, N.V.

Inst : Academy of Sciences Azerbaydzhan SSR

Title : Investigations of the Synthesis and Conversions of
Oxygen-Containing Organosilicon Compounds

Orig Pub : Dokl. AN AzerbSSR, 1956, 12, No 3, 177-181

Abstract : On heating (60-65°, 35 hours) equimolecular amounts of
vinyl ether, gamma-hydroxypropyl-trimethylsilane and
corresponding organic acid (glacial CH₃COOH, propionic,
isobutyric) and subsequent fractionation in vacuum, were
obtained the following partial organosilicon acetals
CH₃CH(OCOR)C(CH₂)₃Si(CH₃)₃ (listing consecutively R,

yield in %, BP in °C/mm, n_D²⁰, d₄²⁰): CH₃, 59.5, 92-93/8,
1.4218, 0.9027; C₂H₅, 73.15, 99-100/7, 1.4242, 0.8979;
(CH₃)₂CH, 64.0, 110-111/7, 1.4262, 0.8935.

Card 1/1

- 110 -

SHIKHIYEV, I. N.

Synthesis and transformations of oxygen-containing or-
ganosilicon compounds. Synthesis of organosilicon acetals
based on the vinyl silane of γ -diisopropylurethylsilane
organosilicon alcohols and silanes. I. A. Shikhiyev and
N. I. Gerasimov. *Chem. Abstr.* 1985, 111: 125800c. *Chem.*
1985, 111: 125800c. English translation: See C.A.B. 50.
1985, 111: 125800c. B. M. R.

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SHIKHIYEV, I. A.

E-2

USSR/Organic Chemistry - Synthetic Organic Chemistry

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4468

Author : Shikhiyev, I.A., Komarov, N.V.

Inst : Academy of Sciences USSR

Title : Investigations of the Synthesis and Conversions of Oxygen-Containing Organosilicon Compounds. Synthesis of Organosilicon Acetals on the Basis of Vinyl Ether of Gamma-Hydroxypropyl-Trimethylenesilane, Organosilicon Alcohols and Silanol.

Orig Pub : Dokl. AN SSSR, 1956, 108, No 2, 279-281

Abstract : By heating equimolecular amounts of $\text{CH}_2=\text{CHO}(\text{CH}_2)_3\text{Si}(\text{CH}_3)_3$ and an organosilicon alcohol $(\text{C}_2\text{H}_5)_3\text{SiOH}$, $(\text{CH}_3)_3\text{SiCH}_2\text{OH}$ or $(\text{CH}_3)_3\text{Si}(\text{CH}_2)_3\text{OH}$ with an addition of 30% solution of HCl, at 65° for 30 minutes, there have been synthesized

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Card 1/2

Distr: 4E4j/4E3d/4F2c(j)

Synthesis and transformations of unsaturated organosilicon compounds. II. Synthesis of tertiary triatomic silicon bearing alcohols of the acetylenic series. I. A. Dushner, M. F. Shostakovskii, N. V. Komarov, and L. A. Kayutenko (N. D. Zelinskii Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Izv. Akad. Nauk S.S.S.R. Otdel. Khim. Nauk* 1957, 1129-41, 41-51, 25344; --To Bt. MgBr from 20 g. Mg was added at -10° 50.4 g. $\text{Me}_2\text{C}(\text{OH})\text{C}\equiv\text{CH}$ and the mixt. stirred 3 hrs., left overnight, stirred 2-3 hrs., treated with 1 g. CuCl_2 and 0.5 g. HgCl_2 , treated with strong cooling with 27 g. SiHCl_3 , refluxed 12-15 hrs., treated with 10 g. HCl , and acid with Et_2O , yielding 24% $\text{H}_3\text{SiC}\equiv\text{CCMe}_2\text{OH}$ (b.p. 133-35 $^{\circ}$ (dioxane)). Similarly $\text{Me}_2\text{C}(\text{OH})\text{C}\equiv\text{CH}$ and 10 g. MgBr with MeSiCl_3 gave 92% $\text{MeSiC}\equiv\text{CCMe}_2\text{OH}$ (b.p. 214 $^{\circ}$), while the use of $\text{CH}_3\text{CH}_2\text{SiCl}_3$ similarly resulted in 65.7% $\text{CH}_3\text{CH}_2\text{SiC}\equiv\text{CCMe}_2\text{OH}$ (b.p. 172.6-73 $^{\circ}$ dioxane). V. Synthesis of mixed diacetylenic organosilicon glycols. I. A. Shikhiev and L. A. Kayutenko. *Izv.* 991-3. --Reaction of 0.5 mole $\text{Me}_2\text{C}(\text{OH})\text{C}\equiv\text{CH}$ with 1 mole RMgX (unspecified) and treatment of the cooled mixt. with 0.25 mole MePhSiCl_2 gave after refluxing 1 hrs. and treatment with cold dil. HCl 47.4% $(\text{HO})\text{CMe}_2\text{C}\equiv\text{CMePh}$ (l.p. m. 129-30 $^{\circ}$), this hydrogenated over Raney Ni in EtOH to *satd. deriv.* m. 93-4 $^{\circ}$. Fractionated with Ac_2O gave the *diacetate* b.p. 179-8 $^{\circ}$, d_{20} 1.0281, n_D^{20} 1.4112. Similarly were obtained: 57.3% $(\text{HO})\text{CMe}_2\text{C}\equiv\text{CMePh}$ m. 62-3 $^{\circ}$; 43.7% $(\text{HO})\text{CMe}_2\text{C}\equiv\text{CMePh}$ m. 62-3 $^{\circ}$; 83.8% $(\text{HO})\text{CMe}_2\text{C}\equiv\text{CMePh}$ m. 62-3 $^{\circ}$; $(\text{HO})\text{CMe}_2\text{C}\equiv\text{CMePh}$ m. 62-3 $^{\circ}$. G. M. Kosolapoff

Em

SHIKHIYEV, I.A.; KAYUTENKO, L.A.

Studies in the field of synthesis and transformations of unsaturated organosilicon compounds. Report No.5: Synthesis of mixed diacetylene organosilicon glycols. Izv. AN SSSR. Otd. khim. nauk no.8:991-993 (MIRA 11:2)
Ag '57.

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Glycols) (Silicon organic compounds)

SHIKHIYEV, I.A.; SHOSTAKOVSKIY, M.F.; KOMAROV, N.V.

Synthesis and transformation of silicon organic compounds containing oxygen. Report No.8: Interaction of vinyl ethers with silanes and β -alcohols containing silicon. Izv. AN SSSR. Otd. khim. nauk no.9:1132-1133 S '57. (MIRA 10:12)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Vinyl ether) (Silane) (Alcohols)

SHIKHIYEV, I.A.; SHOSTAKOVSKIY, M.F.; KOMAROV, N.V.; KAYUTENKO, L.A.

Studies in the field of synthesis and transformations of unsaturated silicon organic compounds. Report No.2: Synthesis of silicon containing tertiary triatomic alcohols of the acetylene series. Izv. AN SSSR. Otd. khim. nuak no.9:1139-1141 S '57. (MIRA 10:12)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Silicon organic compounds) (Alcohols)

SHIKHIYEV, I. A.

Synthesis and transformation of unsaturated hydroxy-d
containing siloxane compounds *M. P. Shostakovskii*
Doklady Akad. Nauk SSSR 1957 (in Russian); cf. *J. Amer. Chem. Soc.* 79, 10, 1281 (1957); C.A. 51, 1281 (1957).
 1. 67 g. and 0.6 g. $Pd-C_2CO_3$ was placed in an ampoule, the air displaced with C_2H_4 , then heated to 150°C. with C_2H_4 , the mixt. slowly heated, stirred continuously stirring 15-20 min., cooled, and distilled, yielding 17.4 g. dimethylchlorosilane (II). To 29.4 g. (0.18 mole) Et_3SiH was added dropwise with cooling 2.9 g. (0.18 mole) Et_3SiCl , the mixt. heated 30 min., cooled to 0°C. with vigorous stirring, 60.4 g. dimethylchlorosilane (II) added slowly dropwise, the mixt. stirred 12-24 hrs., 1 g. Cu_2Cl_2 added as catalyst, 1.7 g. I added dropwise with stirring, the mixt. heated on a water bath at 34-35°C. 12-15 min., HCl added until the ppt. dissolved, the water removed, the ext. added to the Et_2O , dried, the Et_2O removed, the residue distilled, yielding 69.4% $HSi(C_2H_5)_2C_2H_5$ (III).
 60.4 g. IV, 100% yield.

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Inst. Org. Chem. AS USSR

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Distr: 4E4j/4E2c(j)/4E3d

~~Organosilicon alcohols and phenols. M. E. Shostakov-
skii, I. A. Shikhov, and N. V. Komarov. Uspekhi Khim.~~
26, 1087-1094 (1957).—Review of the synthesis and reactions
of organosilicon compds. belonging to classes of silses.
phenols, with 83 references through 1956. G.M.K. 1/

PM

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2 May
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62-58-3-20/30

AUTHORS: Shikhiyev, I. A. Kayutenko, L. A. , Lukevits, E.

TITLE: Investigations in the Domain of the Synthesis and Reactions of Unsaturated Organosilicon Compounds (Issledovaniya v oblasti sinteza i prevrashcheniy nepredel'nykh kremneorganicheskikh soyedineniy) Communication 9: The Synthesis of Mixed Organosilicon Glycols of the Diacetylene Series (Soobshcheniye 9: Sintez smeshannykh kremneorganicheskikh glikoley diatsetilennovo ryada)

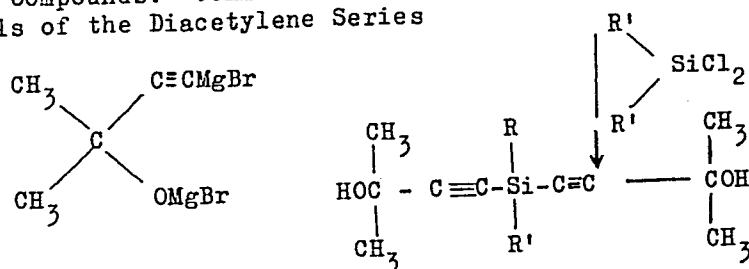
PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1958, Nr 3, pp. 363 -364 (USSR)

ABSTRACT: The present paper belongs to those investigations dealing with the development of the chemistry of ternary acetylene alcohols containing silicon in their composition. The authors describe two representatives of the mixed diacetylene glycols which were synthesized according to the following scheme:

Card 1/3

62-58-3-20/30

Investigations in the Domain of the Synthesis and Reactions of Unsaturated Organosilicon Compounds. Communication 9: The Synthesis of Mixed Organosilicon Glycols of the Diacetylene Series



(R is equal to CH_3 , $\text{R}' = \text{C}_2\text{H}_5$; C_3H_7)

According to this method another synthesis was also performed which led to the production of a corresponding organosilicon diacetylene glycol. See table. In a similar manner a method for the production of organosilicon alcohols was worked out. There are 1 table and 7 references, 7 of which are Soviet.

Card 2/3

62-58-3-20/30

Investigations in the Domain of the Synthesis and Reactions of Unsaturated Organosilicon Compounds. Communication 9: The Synthesis of Mixed Organosilicon Glycols of the Diacetylene Series

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR
(Institute for Organic Chemistry imeni N. D. Zelinskiy,
AS USSR)

SUBMITTED: October 10, 1957

Card 3/3

SHIKHIYEV, I.A.; SHOSTAKOVSKIY, M.F.; KAYUTENKO, L.A.

Investigations in the synthesis and conversion of unsaturated
silicon organic compounds. Dokl. AN Azerb.SSR 14 no.9:687-689
'58. (MIRA 11:10)

1. Institut organicheskoy khimii AN SSSR im. N.D.Zelinskogo i
Institut nefiti AN AzerSSR. Predstavleno akademikom AN AzerSSR
Yu.G.Mamedaliyevym.
(Silicon organic compounds)

5(3)

AUTHORS:

Shikhiyev, I. A., Komarov, N. V.,
Aslanov, I. (Baku)

SOV/74-27-12-4/4

TITLE:

Synthesis and Some Transformations of Organic and Organosilicon
Acetals (Sintez i nekotoryye prevrashcheniya organicheskikh
i kremniyorganicheskikh atsetaley)

PERIODICAL:

Uspekhi khimii, 1958, Vol 27, Nr 12, pp 1504 - 1517 (USSR)

ABSTRACT:

In the present paper the authors carried out a comparative estimation of organic and organosilicon acetals by comparing their properties, conditions of synthesis and some transformations based upon acetylene, aldehydes, organic and organosilicon alcohols and silanols. Comparing the methods of synthesis of organic acetals with those of organosilicon acetals the former are stated to show a greater variety. Investigations in the field of synthesis of acetals were started on the basis of acetylene as well as of alcohols containing 1, 2, and 3 carbon atoms in the presence of various catalysts. On the strength of comprehensive investigations it was found that vinyl ethers are valuable initial substances for various syntheses. It was found that apart from acetylene alcohols, also acetylene glycols are good

Card 1/5

Synthesis and Some Transformations of Organic
and Organosilicon Acetals

SOV/74-27-12-4/4

initial substances for the synthesis of acetylene acetals. As far as the saturated glycols are concerned it is known (Refs 24 and 25) that some ethylene glycol derivatives have been widely applied to the field of preparative organic chemistry and various industries. The investigations of the synthesis of cyclic acetals and their application are of great theoretical and practical importance. Silicon containing acetals take a special position (Refs 38 - 41). Organic acetals are colorless, transparent liquids smelling like ether. It is possible to explain the formation of organic acetals in their synthesis from vinyl ether and alcohols on the basis of Shostakovskiy's oxonium theory (Refs 13, 42 - 45). It was shown (Refs 74 and 23) that on heating vinyl ether with alcohol in the autoclave corresponding acetals are formed also without a catalyst. Organic acetals have particular properties which are due to their structure. They are easily formed and are inclined to decompose. It is a well-known fact that (Refs 13, 15, 16) mixed alkyl acetals disproportionate on heating and that they form corresponding symmetric acetals. When heated under atmospheric pressure

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alkyl aryl acetals are split off and phenol is separated (Ref 60). Thus a new method of indirect synthesis of different vinyl ethers by means of distillation of alkyl aryl acetals under atmospheric pressure was discovered. This method is the basis of the indirect synthesis of vinyl ethers of a series of unsaturated tertiary and aliphatic alcohols the synthesis of which can hardly be carried out in a different way. In 1953 the chemistry of organosilicon acetals was introduced for the first time on the basis of vinyl alkyl ether and trialkylsilanols (Refs 61, 62). Later on this reaction was also applied to other representatives of trialkylsilanols (Refs 62 - 65), alkyl aryl silanols (Refs 38, 40, 66 - 68), dialkyl silandiols (Ref 69) and organosilicon alcohols (Refs 38, 70 - 72). According to their structure, organosilicon acetals are divided into symmetric and asymmetric ones. In 1954 the authors of the present paper obtained acetals from α -silicon containing alcohols and vinyl ethers (Refs 38, 40). In 1955 the authors obtained organosilicon acetals on the basis of organosilicon vinyl ethers and alcohols as well as silanols; the mentioned acetals contained

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silicon atoms in both alcohol radicals (Refs 74, 76). Organo-silicon acetals are colorless, transparent and oily liquids smelling like ether. They are easily soluble in organic solvents and not soluble at all in water; compared to organic acetals their freezing point is much lower and they are most resistant. Based upon Shostakovskiy's oxonium theory (Refs 13, 42, 43) it may be assumed that the formation of organosilicon acetals is due to an ion mechanism. Their chemical properties remind us of organic acetals. Nevertheless, new peculiar properties are found in those compounds due to an interaction of silicon and other atoms forming the molecule. It is worth while to carry out further investigation of organosilicon acetals. With respect to their reactivity they are related with their organic analogs and they could, therefore, easily be used as valuable initial substances for numerous transformations which have been well investigated in the case of corresponding organic acetals but are unknown in the case of organosilicon acetals.

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There are 78 references, 61 of which are Soviet.

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USCOMM-DC-60,557

AUTHORS: Shostakovskiy, M. F., Kulibekov, M. R., SOV/79-28-6-22/63
Shikhiyev, I. A.

TITLE: Investigation of the Substitution Reaction of Oxy Radicals
by Radicals of Organomagnesium Compounds (Issledovaniye re-
aktsii obmena oksiradikalov na radikaly magniyorganicheskikh
soyedineniy) III. Conversion of Organomagnesium Compounds
With Mixed Organosilicon Acetals (III. Vzaimodeystviye
magniyorganicheskikh soyedineniy so smeshannyimi kremniyor-
ganicheskimi atsetalyami)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1539-1542
(USSR)

ABSTRACT: In earlier papers (Ref 1) the authors investigated the effect
of the Grignard reagents with respect to the mixed and
asymmetric organic acetals, and they found that in the mixed
acetals the oxy radicals are in the first place substituted
by the Grignard radical under the formation of ethers. With
respect to the substitution of the oxy radicals in the sym-
metric acetals the following sequence shows up: $\text{OAr} > \text{OAlk} >$
 $> \text{OCH}_2\text{C}_6\text{H}_5$. This rule was explained by the presence of a

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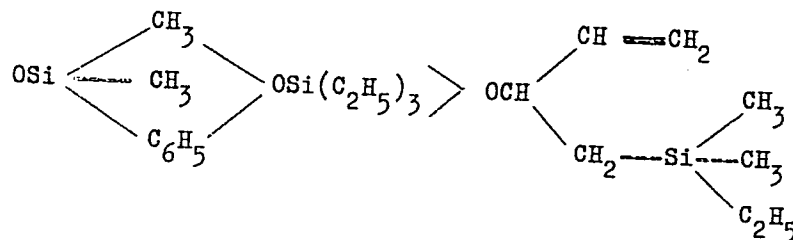
Investigation of the Substitution Reaction of Oxy Radicals by Radicals
of Organomagnesium Compounds. III. Conversion of Organomagnesium Compounds
With Mixed Organosilicon Acetals

certain bond position, by which one of the oxy radicals becomes more mobile. It was of interest to investigate an analogous reaction for mixed organosilicon acetals (Ref 2) and to explain the influence of silicon on the mobility of the oxy radical in the acetals. Different from the aliphatic-aromatic acetals the aliphatic ones easily are subjected to a symmetrization. The mixed organosilicon compounds are accompanied by a number of reactions in the symmetrization, decomposing on thermal treatment. On using the Grignard reagent with mixed organosilicon acetals the authors arrived at the conclusion that the oxy radical containing a silicon atom, is suited for substitution, independent of the fact whether it is directly connected with the oxygen or whether it is in a remote position. In either case the corresponding ethers are obtained (see scheme). Thus it was found that on the action of the Grignard reagent on the organosilicon acetals the following sequence of conversion is found:

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Investigation of the Substitution Reaction of Oxy Radicals by Radicals
of Organomagnesium Compounds. III. Conversion of Organomagnesium Compounds
With Mixed Organosilicon Acetals

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There are 11 references, 11 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii Akademii nauk SSSR i Azerbaydzhanskiy sel'skokhozyaystvennyy institut (Institute of Organic Chemistry, AS USSR and Azerbaydzhan Institute of Agriculture)

SUBMITTED: May 20, 1957

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Investigation of the Substitution Reaction of Oxy Radicals by Radicals of Organomagnesium Compounds. SOV/79-28-6-22/63
III. Conversion of Organomagnesium Compounds With
Mixed Organosilicon Acetals

1. Grignard reagents---Chemical reactions
2. Organic acids---Chemical reactions
3. Silicon compounds (organic)---Chemical reactions

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5(3)

AUTHORS:

Khomutov, A. M., Shikhiyev, I. A., Komarov, N. V.,
Alimov, A. P. SOV/62-59-1-23/38

TITLE:

Investigations in the Field of Chemical Transformations
of Unsaturated and High-Molecular Compounds (Issledovaniya
v oblasti khimicheskikh prevrashcheniy nepredel'nykh i
vysokomolekulyarnykh soyedineniy) Communication 8. Co-
polymerization of γ -Silicon—Containing Vinyl Ethers and
Methyl Methacrylate (Soobshcheniye 8. Sopolimerizatsiya
 γ -kremnesoderzhashchikh prostykh vinilovykh efirov i metil-
metakrilata)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 1, pp 140 - 143 (USSR)

ABSTRACT:

In the present paper the authors investigated the copoly-
merization of methyl methacrylate and vinyl ether which
contain the silicon atom in γ -position with respect to
ethereal oxygen. Ether of γ -hydroxy-propyl-trimethyl
silane (Ref 1) and γ -hydroxy-propyl-methyl-diethyl silane
(Ref 2) were used. These compounds were copolymerized in
the presence of benzoyl peroxide and dinitrile of azoiso-

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